

Recovery Plan Action Status

Plan Name: Recovery Plan for the San Francisco Garter Snake (*Thamnophis sirtalis tetrataenia*)

Plan Status: Final

Plan Date: 11-Sep-85

Lead Agency: USFWS

Lead Office: Sacramento Fish And Wildlife Office

(916)

414-6600)

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
San Francisco garter snake (<i>Thamnophis sirtalis tetrataenia</i>)	1	11	Enforce laws and regulations to promote SFGS conservation	Ongoing Current	FY 2009		California Department of Parks and Recreation, U.S. Fish and Wildlife Service, Law Enforcement Division, California Department of Fish and Game, U.S. Environmental Protection Agency, U.S. Army Corps of Engineers	Other: Law Enforcement	Contract	Security personnel at the San Francisco airport began monitoring the West of Bayshore property, which is home to a large population of San Francisco garter snakes, in order to reduce illegal access.
San Francisco garter snake (<i>Thamnophis sirtalis tetrataenia</i>)	2	12	Evaluate success of law enforcement	Not Started			U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Other: Law Enforcement	Contract	Every three years.
San Francisco garter snake (<i>Thamnophis sirtalis tetrataenia</i>)	2	13	Propose appropriate new regulations or revisions.	Not Started			U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Other: Regulations	Contract	Approx. every 5 years
San Francisco garter snake (<i>Thamnophis sirtalis tetrataenia</i>)	1	211	Pescadero Marsh Preserve: Secure cooperation of the California Department of Parks and Recreation	Complete	Prior to FY 1995	Prior to FY 1995	California Department of Parks and Recreation, U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Management	Contract	

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	2	212	Develop and implement a management plan for SFGS at Pescadero Marsh Preserve.	Ongoing Current	Prior to FY 1995		California Department of Parks and Recreation, U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Management: Planning	Contract	
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	1	213	Monitor SFGS at Pescadero	Ongoing Current	Prior to FY 1995		California Department of Parks and Recreation, U.S. Fish and Wildlife Service, Endangered Species Division	Research: Population Surveys	Contract	
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	2	214	Minimize degradation and/or loss of habitat.	Ongoing Current	Prior to FY 1995		California Department of Parks and Recreation	Management: Habitat Maintenance and Manipulation	Contract	
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	1	221	Ano Nuevo State Reserve: Secure cooperation of the California Department of Parks and Recreation	Complete	Prior to FY 1995	Prior to FY 1995	California Department of Parks and Recreation, U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Management	Internal Technical Assistance	
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	2	222	Develop and implement a management plan for SFGS at Ano Nuevo State Reserve.	Ongoing Current	Prior to FY 1995		California Department of Parks and Recreation, U.S. Fish and Wildlife Service, Endangered Species Division	Management: Planning	Contract	
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	1	223	Monitor SFGS at Ano Nuevo	Ongoing Current	Prior to FY 1995		California Department of Parks and Recreation, U.S. Fish and Wildlife Service, Endangered Species Division	Research: Population Surveys	Contract	
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	2	224	Minimize degradation and/or loss of habitat.	Ongoing Current	Prior to FY 1995		California Department of Parks and Recreation	Management: Habitat Maintenance and Manipulation	Contract	

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	1	231	Secure cooperation of the S.F. Water Department and National Park Service	Complete	Prior to FY 1995	Prior to FY 1995	San Francisco Water Department, National Park Service, U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Management	Internal Technical Assistance	FY-85 PA (5f)
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	2	232	Develop and implement a management plan for SFGS at San Francisco Fish and Game Refuge.	Ongoing Current	Prior to FY 1995		San Francisco Water Department, National Park Service, U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Management: Planning	Contract	NPS costs largely administrative
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	1	233	Monitor SFGS at the San Francisco State Fish and Game Refuge	Ongoing Current	Prior to FY 1995		San Francisco Water Department, U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Research: Population Surveys	Contract	FY-85 PA (5f)
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	2	234	Minimize degradation and/or loss of habitat.	Ongoing Current	Prior to FY 1995		San Francisco Water Department, U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Management: Habitat Maintenance and Manipulation	Contract	FY-85 PA (5f)
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	1	241	Secure cooperation of the City of San Francisco and the S.F. Airport Department to manage and protect the Milbrae site	Complete	Prior to FY 1995	Prior to FY 1995	San Francisco International Airport, City of San Francisco, U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Management	Internal Technical Assistance	FY-85 PA (5f) - CSF and SFAD costs largely administrative. SFO completed a recovery action plan to manage property for SFGS for 10 years starting FY2008.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	2	242	Develop and implement a management plan for the San Francisco Airport / Milbrae site	Complete	Prior to FY 1995	FY 2008	City of San Francisco, U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Management: Habitat Maintenance and Manipulation, Management: Planning, Research: Population Surveys	Contract	Management plan as part of recovery action plan completed in April 2008. Habitat enhancement project started in September 2008 at Milbrae site. Population monitoring revealed over 400 San Francisco garter snakes on this property.
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	1	2431	Maintain fence at Milbrae site	Complete	FY 1995 - FY 1999	FY 1995 - FY 1999	San Francisco International Airport, City of San Francisco, U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Management: Habitat Maintenance and Manipulation	Contract	Constructed during BART expansion.
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	1	2432	Provide frequent patrols	Ongoing Current	Prior to FY 1995		San Francisco International Airport, City of San Francisco, U.S. Fish and Wildlife Service, Law Enforcement Division, California Department of Fish and Game	Other: Law Enforcement	Contract	FY-85 PA (4a) - law enforcement occasionally patrols
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	1	244	Monitor SFGS at the Milbrae site	Ongoing Current	Prior to FY 1995		San Francisco International Airport, City of San Francisco, U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Research: Population Surveys	Contract	FY-85 PA (5f) - CSF and SFAD costs largely administrative. 2008 recovery action plan set monitoring schedule for 10 years for both SFGS and California red-legged frog.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	2	245	Minimize degradation and/or loss of habitat.	Ongoing Current	Prior to FY 1995		San Francisco International Airport, City of San Francisco, U.S. Federal Aviation Administration, U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game, U.S. Army Corps of Engineers	Management: Habitat Maintenance and Manipulation	Contract	SFAD, CSF, COE, and FAA costs largely administrative. FY-85 PA (5f)
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	2	246	Identify important areas on Milbrae site.	Complete	Prior to FY 1995	Prior to FY 1995	San Francisco International Airport, U.S. Federal Highway Administration, U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Research: Habitat Status	Contract	FY-85 PA (5f) SFAD, CSF costs largely administrative.
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	1	251	Secure cooperation of Sharp Park Golf Course to manage and protect SFGS	Ongoing Current	Prior to FY 1995		Sharp Park Golf Course, San Mateo County, California, U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Management	Internal Technical Assistance	SPGC and SMC costs largely administrative. In FY2009 began discussions with SF Parks and Recreation Department and GGNRA concerning habitat enhancement alternatives for SFGS at the Sharp Park golf course at Mori Pt.
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	2	252	Develop and implement a management plan for SFGS at Sharp Park Golf Course	Ongoing Current	Prior to FY 1995		Sharp Park Golf Course, U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Management: Planning	Contract	SPGC costs largely administrative. SPGC meeting in 2010 agreed to conduct a section 7 or HCP for incidental take of SFGS and CRF while operating the golf course.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	2	253	Minimize adverse impacts from trampling and human encroachment at SPGC.	Ongoing Current	Prior to FY 1995		Sharp Park Golf Course, San Mateo County, California, U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Management: Planning	Contract	SPGC costs largely administrative. FY-85 PA (5f)
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	1	254	Monitor SFGS at Sharp Park Golf Course	Ongoing Current	Prior to FY 1995		Sharp Park Golf Course, U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Research: Population Surveys	Contract	FY-85 PA (5f) - SPGC costs largely administrative. Swaim Biological has been conducting surveys from FY2006 to FY 2009.
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	1	261	Secure SFGS habitat on the Cascade Ranch	Ongoing Current	Prior to FY 1995		California Department of Parks and Recreation, San Mateo County, California, Cascade Ranch Corporation, U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Management	Internal Technical Assistance	Depends on cooperation of land owner
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	2	262	Develop and implement a management plan for SFGS at Cascade Ranch.	Ongoing Not Current			California Department of Parks and Recreation, San Mateo County, California, Cascade Ranch Corporation, U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Management: Planning	Contract	Cascade ranch divided and changed ownership. This remains a viable area for a recovery population. The area was assessed for potentially managing the local SFGS population but that has not advanced since the change of ownership.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	2	263	Minimize adverse impacts to SFGS from trampling and human encroachment at Cascade Ranch.	Not Started			San Mateo County, California, Cascade Ranch Corporation, U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Management: Habitat Maintenance and Manipulation	Contract	Depends on cooperation of land owner
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	2	264	Monitor SFGS at Cascade Ranch.	Ongoing Not Current	Prior to FY 1995		California Department of Parks and Recreation, U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Research: Population Surveys	Contract	FY-85 PA (5f)
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	2	311	Identify potential habitat	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Research: Habitat Status	Contract	FY-85 PA (5f). Recovery actions on private property have identified several small sites with San Francisco garter snakes including Shilling Lake and 3000 Portola Road in Woodside.
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	2	312	Conduct periodic surveys at suspected locations.	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Research: Population Surveys	Contract, Volunteer	FY-85 PA (5f) Section 6 funding. Surveys conducted at Cloverdale Ranch (POST property) as part of a study on the effects of controlled burns. Four years of survey data completed with pre and post burn data being analyzed in 2011.
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	2	32	Secure each essential site.	Ongoing Current	Prior to FY 1995		California Department of Parks and Recreation, U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Acquisition	Internal Technical Assistance	

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	2	33	Develop and implement a management plan for each secured site.	Ongoing Current	Prior to FY 1995		California Department of Parks and Recreation, U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Management: General	Contract	
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	2	41	Develop population survey techniques.	Complete	Prior to FY 1995	Prior to FY 1995	U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Research: Population Surveys	Contract	
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	2	421	Conduct survey at Pescadero and Ano Nuevo State Areas.	Ongoing Current	FY 2005		California Department of Parks and Recreation, U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Research: Population Surveys	Contract	Survey frequency to be determined in #41
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	2	422	Conduct survey at San Francisco State Fish and Game Refuge.	Ongoing Current	FY 2006		San Francisco State Fish and Game Refuge, U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Research: Population Surveys	Contract	Survey frequency to be determined in #41
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	2	423	Conduct survey at Milbrae site.	Ongoing Current	Prior to FY 1995		City of San Francisco, U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Research: Population Surveys	Contract	Survey frequency to be determined in #41. Baseline survey conducted in FY 2007 revealed a relatively large population at the Milbrae site. Intensive survey in 2009 revealed a local population of at least 600 SFGS.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	2	424	Conduct survey at Laguna Salada site.	Ongoing Current	FY 1995 - FY 1999		Sharp Park Golf Course, U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Research: Population Surveys	Contract	Begin FY 3 SPGC costs largely administrative. Frequency to be determined in #41
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	2	425	Conduct survey at Cascade Ranch.	Unknown			California Department of Parks and Recreation, U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Research: Population Surveys	Contract	Every year for first 3 years. Then as determined in #41. FY-85 PA (5f)
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	2	426	Conduct surveys of other sites.	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Research: Population Surveys	Contract	Frequency to be determined in #41. Surveys at Cloverdale Ranch in conjunction with burn effects study.
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	2	43	Evaluate survey data and methods.	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Research: Management Techniques	Contract	Every 3 years. Begin FY 3.
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	2	511	Determine age-specific food habits.	Complete	Prior to FY 1995	Prior to FY 1995	California Department of Parks and Recreation, U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Research: Other Information	Contract	Begin FY 1
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	2	512	Investigate SFGS movements and activity patterns.	Ongoing Current	Prior to FY 1995		California Department of Parks and Recreation, U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Research: Management Techniques	Contract	Begin FY 2

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	1	513	Identify and evaluate mortality factors and recruitment for each secured area	Ongoing Current	Prior to FY 1995		California Department of Parks and Recreation, U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Research: Demographic Studies	Contract	Begin FY 2
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	1	521	Identify habitat types used by SFGS	Complete	Prior to FY 1995	Prior to FY 1995	California Department of Parks and Recreation, U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Research: Habitat Requirements	Contract	Begin FY 3
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	2	522	Determine the importance of habitat size and diversity.	Complete	Prior to FY 1995	Prior to FY 1995	California Department of Parks and Recreation, U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Research: Habitat Status	Contract	To begin FY 5; estimated cost 9.0K/yr.
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	2	53	Reevaluate introgression	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Research: Genetics	Graduate Student	New genetic study in progress by SFSU grad student. Initial results show lack of variability between T. sirtalis subspecies.
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	2	54	Identify essential habitat.	Ongoing Current	FY 2007		California Coastal Commission, U.S. Fish and Wildlife Service, Endangered Species Division, California Department of Fish and Game	Research: Habitat Status	Contract	Begin FY 4, Cost largely internal administration. Studies are ongoing which define the habitat requirements of the SFGS.
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	3	611	Provide interpretive program at Pescadero.	Complete	Prior to FY 1995	Prior to FY 1995	California Department of Parks and Recreation	Other: Information and Education	Contract	

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	3	612	Provide interpretive program at Ano Nuevo	Complete	Prior to FY 1995	Prior to FY 1995	California Department of Parks and Recreation	Other: Information and Education	Contract	
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	3	62	Prepare brochure on SFGS recovery	Complete	Prior to FY 1995	FY 1995 - FY 1999	California Department of Fish and Game	Other: Information and Education	Contract	Costs estimated at 3k/yr. Begin FY 7
San Francisco garter snake (Thamnophis sirtalis tetrataenia)	3	63	Develop slide-tape program	Complete	Prior to FY 1995	FY 1995 - FY 1999	U.S. Fish and Wildlife Service, Endangered Species Division	Other: Information and Education	Contract	Cost about 4k. Begin FY 5